SONY

3-861-575-13 (1)

Trinitron® Color Graphic Display

Operating Instructions EN
Mode d'emploi F
Manual de instrucciones ES
使用说明书 C

GDM-400PS
GDM-500PS

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Owner's Record

The model and serial numbers are located at the rear of the unit. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.
Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

INFORMATION
This product complies with Swedish National Council for Metrology (MPR) standards issued in December 1990 (MPR II) for very low frequency (VLF) and extremely low frequency (ELF).

INFORMATION
Ce produit est conforme aux normes du Swedish National Council for Metrology de décembre 1990 (MPR II) en ce qui concerne les fréquences très basses (VLF) et extrêmement basses (ELF).

Hinweis
Dieses Gerät erfüllt bezüglich tieffrequenter (very low frequency) und tiefstfrequenter (extremely low frequency) Strahlung die Vorschriften des „Swedish National Council for Metrology (MPR)" vom Dezember 1990 (MPR II).

INFORMACIÓN
Este producto cumple las normas del Consejo Nacional Sueco para Metrología (MPR) emitidas en diciembre de 1990 (MPR II) para frecuencias muy bajas (VLF) y frecuencias extremadamente bajas (ELF).

Dieses Gerät entspricht den folgenden europäischen EMV-Vorschriften für Betrieb in Wohngebieten, gewerblicher Gebieten und Leichtindustriegebieten.

EN55022/1987 Klasse B
EN50082-1/1992
EN60555-2/1987

Hinweise

- Aus ergonomischen Gründen wird empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast).
- Aus ergonomischen Gründen (flimmern) sollten nur Darstellungen bei Vertikalfrequenzen ab 70 Hz (ohne Zeilensprung) verwendet werden.
- Die Konvergenz des Bildes kann sich auf Grund des Magnetfeldes am Ort der Aufstellung aus der korrekten Grundeinstellung verändern. Zur Korrektur empfiehlt es sich deshalb, die Regler an der Frontseite für Konvergenz so einzustellen, daß die getrennt sichtbaren Farblinien für Rot, Grün und Blau bei z.B. der Darstellung eines Buchstabens zur Deckung (Konvergenz) gelangen.
  Siehe hierzu auch die Erklärungen zu Konvergenz.

NOTICE

This notice is applicable for USA/Canada only.
If shipped to USA/Canada, install only a UL LISTED/CSA LABELLED power supply cord meeting the following specifications:

SPECIFICATIONS

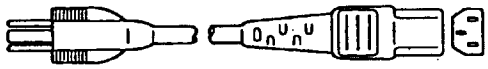
Plug Type	Nema-Plug 5-15p
Cord	Type SVT or SJT, minimum 3 × 18 AWG
Length	Maximum 15 feet
Rating	Minimum 7 A, 125 V

NOTICE

Cette notice s'applique aux Etats-Unis et au Canada uniquement.
Si cet appareil est exporté aux Etats-Unis ou au Canada, utiliser le cordon d'alimentation portant la mention UL LISTED/CSA LABELLED et remplissant les conditions suivantes:

SPECIFICATIONS

Type de fiche	Fiche Nema 5-15 broches
Cordon	Type SVT ou SJT, minimum 3 × 18 AWG
Longueur	Maximum 15 pieds
Tension	Minimum 7 A, 125 V



As an ENERGY STAR Partner, Sony Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

This monitor complies with the TCO 1992 guidelines for power saving when used with a computer equipped with VESA Display Power Management Signaling (DPMS).

(GDM-400PS only)

This monitor complies with the TCO'95 guidelines.

(GDM-500PS only)

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをしてください。

(GDM-500PS only)

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- Macintosh is a trademark licensed to Apple Computer, Inc., registered in the U.S.A. and other countries.
- Windows® and MS-DOS are registered trademarks of Microsoft Corporation in the United States and other countries.
- IBM PC/AT and VGA are registered trademarks of IBM Corporation of the U.S.A.
- VESA is a trademark of Video Electronics Standard Association.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies.
- Furthermore, "™" and "®" are not mentioned in each case in this manual.

Precautions

Installation

- Prevent internal heat build-up by allowing adequate air circulation. Do not place the monitor on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the monitor near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not place the monitor near equipment which generates magnetism, such as a transformer or high voltage power lines.

Maintenance

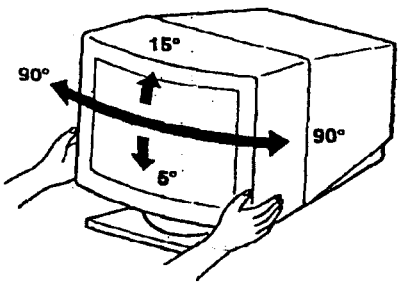
- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzine.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
- Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.

Transportation

When you transport this monitor for repair or shipment, use the original carton and packing materials.

Use of the Tilt-Swivel

With the tilt-swivel, this monitor can be adjusted to the desired angle within 180° horizontally and 20° vertically. To turn the monitor vertically and horizontally, hold it at the bottom with both hands as illustrated below.

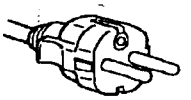


Warning on power connection

- Use an appropriate power cord for your local power supply.
  For the customers in the U.S.A.
  If you do not use the appropriate cord, this monitor will not conform to mandatory FCC standards.

Examples of plug types

for 100 to 120 V AC


for 200 to 240 V AC

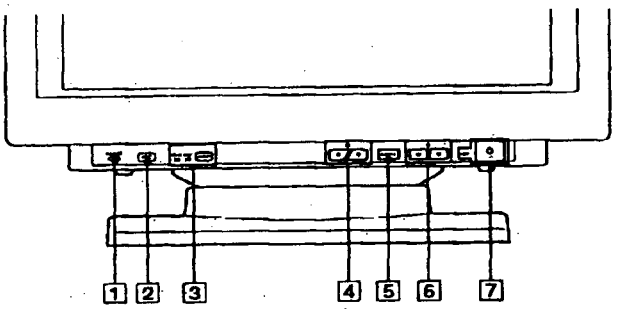
- Before disconnecting the power cord, wait at least 30 seconds after turning off the power to allow the static electricity on the CRT display surface to discharge.
- After the power has been turned on, the CRT is demagnetized (degaussed) for about 3 seconds. This generates a strong magnetic field around the metal frame, which may affect the data stored on magnetic tapes and disks near the bezel. Place magnetic recording equipment, tapes and disks away from this monitor.

The outlet should be installed near the equipment and be easily accessible.

Identifying Parts and Controls

See the pages in parentheses for further details.
GDM-500PS is used for illustration purposes throughout this manual.

Front



1 RESET (reset) button (page 17)
Resets the adjustments to the factory settings.

2 ASC (auto sizing and centering) button (page 7)
Automatically adjusts the size and centering of the images.

3 INPUT (input) button and HD15/BNC indicators (page 8)
Selects the HD15 or 5BNC video input signal. Each time you press this button, the input signal and corresponding indicator alternate.

4 ☼ (brightness) (↓/↑) buttons (pages 8 – 17)
Adjust the picture brightness.

Function as the (↓/↑) buttons when adjusting other items.

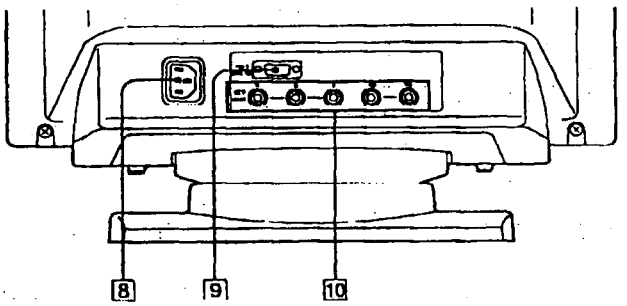
5 MENU (menu) button (pages 8 -17)
Displays the MENU OSD.

6 ◑ (contrast) (←/→) buttons (pages 8 – 17, 22)
Adjust the contrast.

Function as the (←/→) buttons when adjusting other items.

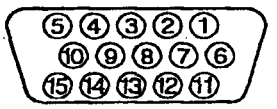
7 ⏻ (power) switch and indicator (pages 19, 22)
Turns the monitor on or off.
The indicator lights up in green when the monitor is turned on, and lights up in orange when the monitor is in power saving mode.

Rear



8 AC IN connector
Provides AC power to the monitor.

9 Video input 1 connector (HD15)
Inputs RGB video signals (0.700 Vp-p, positive) and SYNC signals.



Pin No.	Signal	Pin No.	Signal
1	Red	8	Blue Ground
2	Green (Composite Sync on Green)	9	DDC + 5V*
		10	Ground
		11	ID (Ground)
3	Blue	12	Bi-Directional Data (SDA)*
4	ID (Ground)		
5	DDC Ground*	13	H. Sync
6	Red Ground	14	V. Sync
7	Green Ground	15	Data Clock(SCL)*

* Display Data Channel (DDC) Standard of VESA

10 Video input 2 connector (5 BNC)
Inputs RGB video signals (0.700 Vp-p, positive) and SYNC signals.

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Setup

Before using this monitor, check that the following items are included in your carton:

- Monitor (1)
- Power cord (1)
- HD15 video signal cable (1)
- Macintosh adapter (1)
- Windows® 95 Monitor Information Disk/File (1)
- TCO'95 Eco-document (1) (GDM-500PS only)
- Warranty card (1)
- These operating instructions (1)

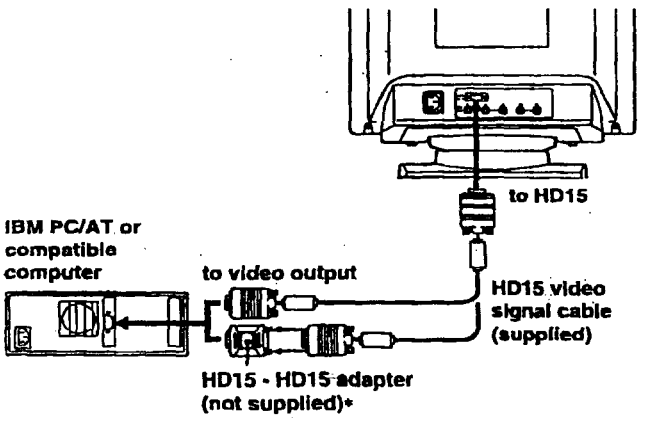
This monitor works with any IBM or compatible system equipped with VGA or greater graphics capability. Although this monitor works with other platforms running at horizontal frequencies between 30 and 94 kHz (GDM-400PS), 30 and 107 kHz (GDM-500PS), including Macintosh and Power Macintosh systems, a cable adapter is required. Please consult your dealer for advice on which adapter is suitable for your needs.

Step 1: Connect the monitor to the computer

With the computer switched off, connect the video signal cable to the monitor using the supplied HD15 video signal cable.

- If you are using an IBM PC/AT or compatible computer, refer to the section below.
- If you are using a Macintosh or compatible computer, refer to the following section, "Connecting to a Macintosh or compatible computer."
- If you want to use the 5 BNC connectors, refer to the section, "Connecting to the 5 BNC connectors."

Connecting to an IBM PC/AT or compatible computer

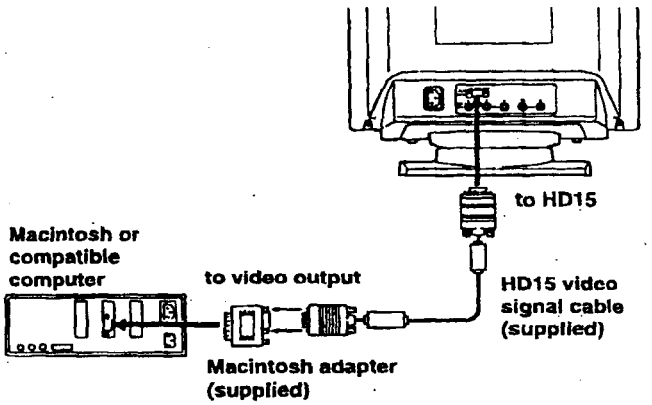

to HD15
IBM PC/AT or compatible computer
to video output
HD15 video signal cable (supplied)
HD15 - HD15 adapter (not supplied)*

* The HD15 - HD15 adapter may be needed for some models.

If your PC system is not compatible with DDC2AB and DDC2B+

This monitor uses the No. 9 pin in the video signal connector for DDC2AB and DDC2B+ compatibility.
Some PC systems which are not compatible with either DDC2AB or DDC2B+ may not accept the No. 9 pin. If you are not sure whether your PC system accepts the No. 9 pin or not, use the HD15 (Female) - HD15 (Male without the No. 9 pin) adapter (not supplied). Make sure the male side (without the No. 9 pin) is connected to the computer.

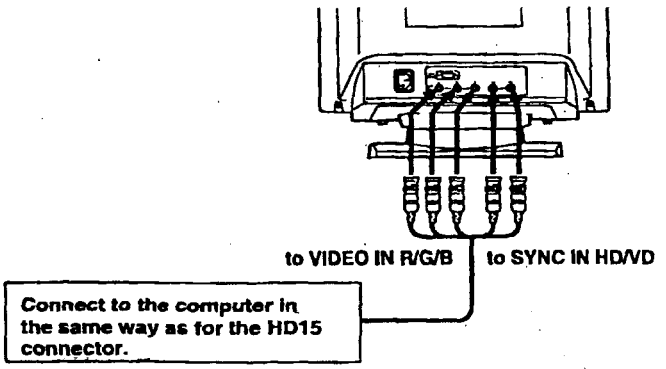
Connecting to a Macintosh or compatible computer



About the supplied Macintosh adapter

The supplied Macintosh adapter is compatible with Macintosh LC, Performa, Quadra and Power Macintosh series computers. Macintosh II series and some older versions of Power Book models may need an adapter with micro switches (not supplied).

Connecting to the 5 BNC connectors



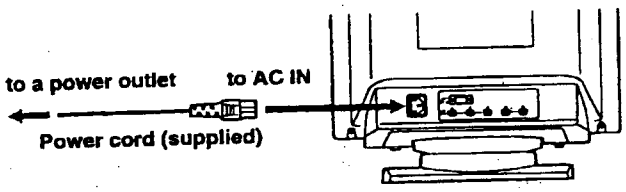
To connect the 5 BNC connectors, use the SMF-400 video signal cable (sold separately). Connect the cables from left to right in the following order: Red–Green–Blue–HD–VD.

Notes

- Do not short the pins of the video signal cable.
- The DDC standard does not apply to the 5 BNC connectors. If you use the DDC standard, connect the HD15 connector to the computer with the supplied video signal cable.

Step 2: Connect the power cord

With the monitor switched off, connect one end of the power cord to the monitor and the other end to a power outlet.



Step 3: Turn on the monitor and computer

The installation of your monitor is complete.

Note

If "OUT OF SCAN RANGE" or "NO INPUT SIGNAL" appears on the screen, see "Warning Messages" on page 20.

For customers using Windows® 95

Install the new model information from the "Windows 95 Monitor Information Disk" into your PC. (To install the file, refer to the attached "About the Windows 95 Monitor Information Disk/File.")

This monitor complies with the "VESA DDC" Plug&Play standard. If your PC/graphics board complies with DDC, select "Plug and Play Monitor (VESA DDC)" as "Monitor type" from "Control Panel" in Windows 95. Some PCs/graphics boards do not comply with DDC. Even if your computer complies with DDC, it may have some problems connecting with this monitor. In this case, select this monitor's model name (GDM-400PS or GDM-500PS) as "Monitor type" in Windows 95.

For customers using Windows NT4.0

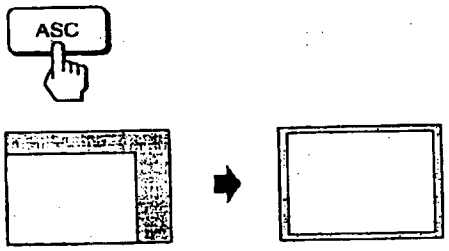
Monitor setup in Windows NT4.0 is different from Windows 95 and does not involve the selection of monitor type. Refer to the Windows NT4.0 instruction manual for further details on adjusting the resolution, refresh rate, and number of colors.

Automatically Adjusting the Size and Centering of the Picture

By pressing the auto sizing and centering (ASC) button, the size and centering of the picture are automatically adjusted to fit the screen.

1 **Turn on the monitor and computer.**

2 **Press the ASC button.**
The picture is adjusted to fit the center of the screen.



Notes

- This function is intended for use with a computer running Windows or similar graphic user interface software that provides a full-screen picture. It may not work properly if the background color is dark or if the input picture does not fill the screen to the edges (such as an MS-DOS prompt).
- The screen may go blank for a few seconds while performing the auto-sizing function. This is not a malfunction.
- Although the signals for picture aspect ratio 5:4 (resolution: 1280 × 1024) do not fill the screen to the edges, the picture is accurately displayed.

Selecting the On-screen Display Language

If you need to change the OSD language, see "Using the LANG (Language) On-screen Display" on page 17.
The default setting is English.

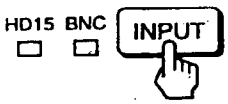
EN

Selecting the Input Signal

This monitor has two signal input connectors (HD15 and 5BNC) and can be connected to two computers. When the power of both computers is on, select the input signal you want to view as follows.

1 Turn on the monitor and both computers.

2 Press the INPUT button to select the HD15 or 5BNC input signal.
Each time you press the INPUT button, the input signal and corresponding indicator alternate.



Selecting the INPUT signal mode

This monitor has two modes of input signal selection, "AUTO" and "MANUAL."

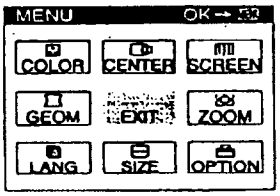
When "AUTO" is selected

If no signal is input from the selected connector, the monitor automatically selects the other connector's signal. When you restart the computer you want to view, or that computer is in power saving mode, the monitor may automatically select the other connector's signal. This is because the monitor switches from the interrupted signal to the constant signal. If this happens, manually select the desired signal using the INPUT button.

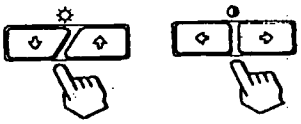
When "MANUAL" is selected

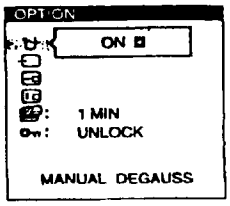
Even if no signal is input from the selected connector, the monitor does not select the other connector's signal.

1 Press the MENU button.
The MENU OSD appears.

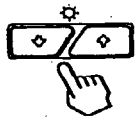


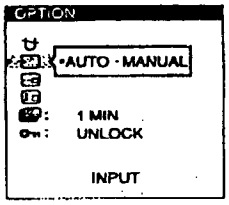
2 Press the ☼↓/↑ and ◑←/→ buttons to select " OPTION," and press the MENU button again.
The OPTION OSD appears.



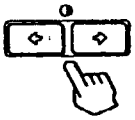


3 Press the ☼↓/↑ buttons to select " (INPUT)."





4 Press the ◑←/→ buttons to select "AUTO" or "MANUAL."



The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

For more information on using the OSD, see "Introducing the On-screen Display System" on page 9.

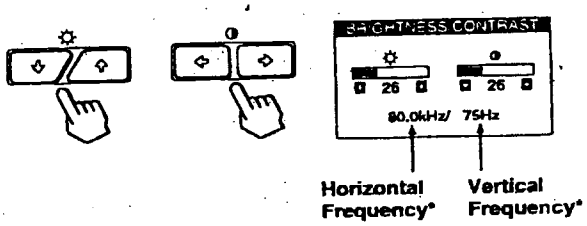
Before adjusting

- Connect the monitor and the computer, and turn them on.
- Select "LANG" in the MENU OSD, then select "ENGLISH" (see page 17).

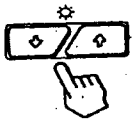
Adjusting the Picture Brightness and Contrast

Once the setting is adjusted, it will be stored in memory for all input signals received.

1 Press the ☼ (brightness) ↓/↑ or ◑ (contrast) ←/→ buttons.
The BRIGHTNESS/CONTRAST OSD appears.

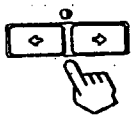


2 For brightness adjustment
Press the ☼↓/↑ buttons.



↑ . . . for more brightness
↓ . . . for less brightness

For contrast adjustment
Press the ◑←/→ buttons.



→ . . . for more contrast
← . . . for less contrast

The OSD automatically disappears after about 3 seconds.

To reset, press the RESET button while the OSD is on. The brightness and contrast are both reset to the factory settings.

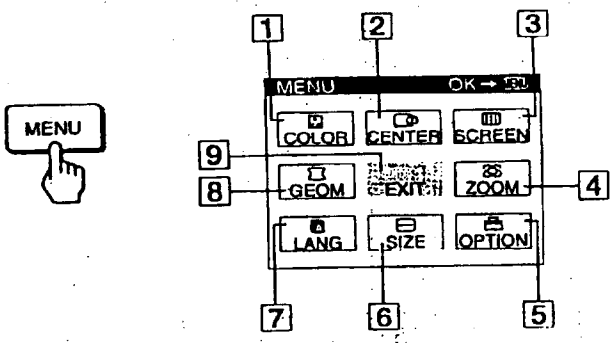
* The horizontal and vertical frequencies for the received input signal appear in the BRIGHTNESS/CONTRAST OSD.

Introducing the On-screen Display System

Most adjustments are made using the MENU OSD.

MENU OSD

Press the MENU button to display the MENU OSD.
This MENU OSD contains links to the other OSDs described below.



EN

1 COLOR
Displays the COLOR OSD for adjusting the color temperature.

2 CENTER
Displays the CENTER OSD for adjusting the centering of the picture.

3 SCREEN
Displays the SCREEN OSD for adjusting the vertical and horizontal convergence, etc.

4 ZOOM
Displays the ZOOM OSD for enlarging and reducing the picture.

5 OPTION
Displays the OPTION OSD for adjusting the OSD position and degaussing the screen, etc.

6 SIZE
Displays the SIZE OSD for adjusting the picture size.

7 LANG
Displays the LANGUAGE OSD for selecting the language.

8 GEOM
Displays the GEOMETRY OSD for adjusting the picture rotation and pincushion, etc.

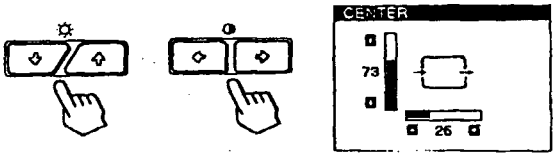
9 EXIT
Closes the MENU OSD.

Using the CENTER On-screen Display

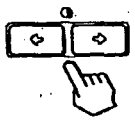
The CENTER settings allow you to adjust the centering of the picture.
Once the setting is adjusted, it will be stored in memory for the current input signal.

1 Press the MENU button.
The MENU OSD appears.

2 Press the ☼↓/↑ and ◑←/→ buttons to select "CENTER," and press the MENU button again.
The CENTER OSD appears.

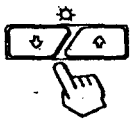


3 For horizontal adjustment
Press the ◑←/→ buttons.



→ . . . to move the picture right
← . . . to move the picture left

For vertical adjustment
Press the ☼↓/↑ buttons.



↑ . . . to move the picture up
↓ . . . to move the picture down

The OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

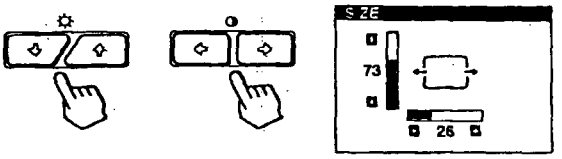
To reset, press the RESET button while the OSD is on.
The horizontal and vertical centerings are both reset to the factory settings.

Using the SIZE On-screen Display

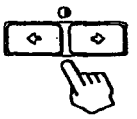
The SIZE settings allow you to adjust the size of the picture.
Once the setting is adjusted, it will be stored in memory for the current input signal.

1 Press the MENU button.
The MENU OSD appears.

2 Press the ☼↓/↑ and ◑←/→ buttons to select "SIZE," and press the MENU button again.
The SIZE OSD appears.

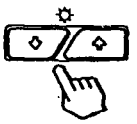


3 For horizontal adjustment
Press the ◑←/→ buttons.



→ . . . to increase picture size
← . . . to decrease picture size

For vertical adjustment
Press the ☼↓/↑ buttons.



↑ . . . to increase picture size
↓ . . . to decrease picture size

The OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

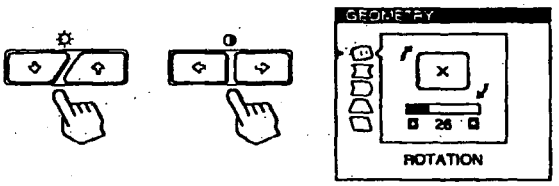
To reset, press the RESET button while the OSD is on.
The horizontal and vertical sizes are both reset to the factory settings.

Using the GEOM (Geometry) On-screen Display

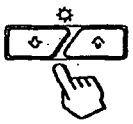
The GEOM (geometry) settings allow you to adjust the shape and orientation of the picture.
Once the rotation is adjusted, it will be stored in memory for all input signals received. All other adjustments will be stored in memory for the current input signal.

1 Press the MENU button.
The MENU OSD appears.

2 Press the ☼↓/↑ and ⊙←/→ buttons to select " GEOM," and press the MENU button again.
The GEOMETRY OSD appears.

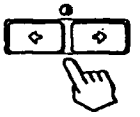


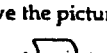
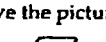
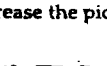
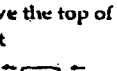
3 Press the ☼↓/↑ buttons to select the item you want to adjust.



Select	To
ROTATION	adjust the picture rotation
PINCUSHION	adjust the picture sides
PIN BALANCE	adjust the picture side balance
KEYSTONE	adjust the picture width
KEY BALANCE	adjust the picture shape balance

4 Press the ⊙←/→ buttons to adjust the settings.



For	Press
ROTATION	→ . . . to rotate the picture clockwise ← . . . to rotate the picture counterclockwise
PINCUSHION	→ . . . to expand the picture sides ← . . . to contract the picture sides
PIN BALANCE	→ . . . to move the picture sides to the right  ← . . . to move the picture sides to the left 
KEYSTONE	→ . . . to increase the picture width at the top ← . . . to decrease the picture width at the top 
KEY BALANCE	→ . . . to move the top of the picture to the right ← . . . to move the top of the picture to the left 

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

To reset, press the RESET button while the OSD is on. The selected item is reset to the factory setting.

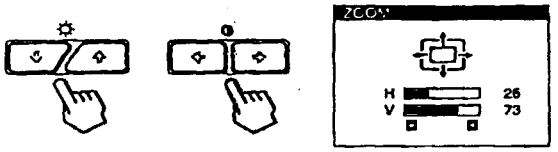
EN

Using the ZOOM On-screen Display

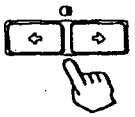
The ZOOM settings allow you to enlarge or reduce the picture.
Once the setting is adjusted, it will be stored in memory for the current input signal.

1 **Press the MENU button.**
The MENU OSD appears.

2 **Press the ☼↓/↑ and ◑←/→ buttons to select " ZOOM," and press the MENU button again.**
The ZOOM OSD appears.



3 **Press the ◑←/→buttons to adjust the picture zoom.**



→ . . . to enlarge the picture
← . . . to reduce the picture

The OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

To reset, press the RESET button while the OSD is on.

Note

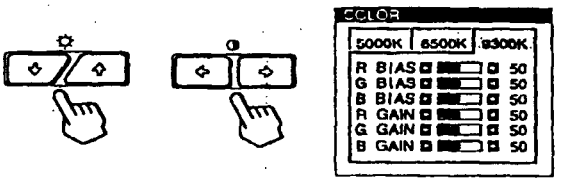
The picture zoom adjustment will stop as soon as either the horizontal or vertical size reaches its maximum or minimum value.

Using the COLOR On-screen Display

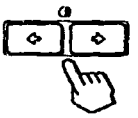
You can change the monitor's color temperature. For example, you can adjust or change the colors of a picture on the screen to match the actual colors of the printed picture. Once the setting is adjusted, it will be stored in memory for all input signals received.

1 **Press the MENU button.**
The MENU OSD appears.

2 **Press the ☼↓/↑ and ◑←/→ buttons to select " COLOR," and press the MENU button again.**
The COLOR OSD appears.

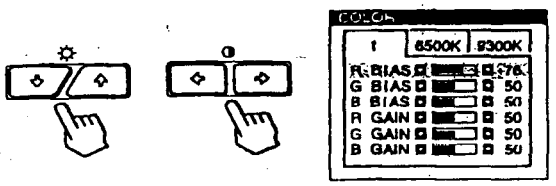


3 **Press the ◑←/→ buttons to select the color temperature.**



There are three color temperature modes in the OSD.
The preset adjustments are:
5000K, 6500K, 9300K

4 Fine tuning the color temperature
Press the ☼↓/↑ buttons to select an item and adjust by pressing the ◑←/→ buttons.



Select **R (red), G (green), or B (blue) BIAS** to adjust the black level of each color's signal.

Select **R (red), G (green), or B (blue) GAIN** to adjust the white level of each color's signal.

The "5000K," "6500K" or "9300K" disappears and the new color settings are memorized for each of the three color modes.
The color temperature modes change as follows:
5000K→ 1, 6500K→ 2, 9300K→ 3

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

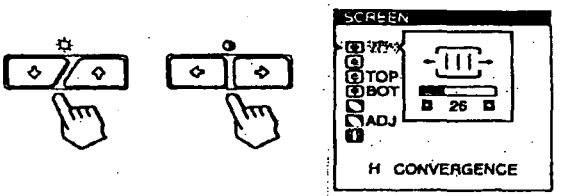
To reset, press the RESET button while the OSD is on. The selected item is reset to the factory settings.

Using the SCREEN On-screen Display

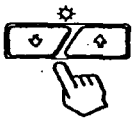
You can adjust convergence settings to eliminate red or blue shadows that may appear around objects on the screen.
Adjust the CANCEL MOIRE function to eliminate wavy or elliptical patterns that may appear on the screen.
Adjust the LANDING function to correct color imbalances at the four corners of the screen due to influence from the earth's magnetism.
Once CANCEL MOIRE is adjusted, it will be stored in memory for the current input signal. All other adjustments will be stored in memory for all input signals received.

1 Press the MENU button.
The MENU OSD appears.

2 Press the ☼↓/↑ and ◑←/→ buttons to select " SCREEN," and press the MENU button again.
The SCREEN OSD appears.



3 Press the ☼↓/↑ buttons to select the item you want to adjust.



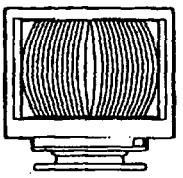
Select	To
H CONVERGENCE	adjust the horizontal convergence
V CONVERGENCE	adjust the vertical convergence
TOP V CONVER TOP	adjust the screen's upper vertical convergence
BOT V CONVER BOTTOM	adjust the screen's lower vertical convergence

(continued)

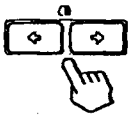
Select	To
LANDING	select one of the four corners that needs color correction due to influence from the earth's magnetism
ADJ LANDING ADJUST	correct the color at one of the four corners of the screen
CANCEL MOIRE *	turn the moire cancellation function "ON" or "OFF." CANCEL MOIRE must be "ON" for "ADJ (MOIRE ADJUST)" to appear on the screen.
ADJ MOIRE ADJUST	adjust the degree of moire cancellation

* Moire is a type of natural interference which produces soft or wavy lines on your screen. It may appear due to interference between the regulated pattern of the picture from the input signal and the phosphor pitch pattern of the CRT.

Example of moire:



4 Press the ●←/→ buttons to adjust the settings.



For	Press
H CONVERGENCE	→ . . . to shift red shadows to the right and blue shadows to the left ← . . . to shift red shadows to the left and blue shadows to the right
V CONVERGENCE	→ . . . to shift red shadows up and blue shadows down ← . . . to shift red shadows down and blue shadows up
TOP V CONVER TOP	→ . . . to shift red shadows up and blue shadows down ← . . . to shift red shadows down and blue shadows up
BOT V CONVER BOTTOM	→ . . . to shift red shadows up and blue shadows down ← . . . to shift red shadows down and blue shadows up
LANDING	→ or ← . . . to select the corner of the screen you want to adjust : top left : top right : bottom left : bottom right
ADJ LANDING ADJUST	→ or ← . . . to reduce any irregularities in the color to a minimum
CANCEL MOIRE	→ . . . to turn CANCEL MOIRE "ON" ← . . . to turn CANCEL MOIRE "OFF"
ADJ MOIRE ADJUST	→ or ← . . . to adjust the screen until the moire is at a minimum

Note

The picture may become fuzzy when CANCEL MOIRE is set to "ON."

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

To reset, press the RESET button while the OSD is on. The selected item is reset to the factory setting.

Using the OPTION On-screen Display

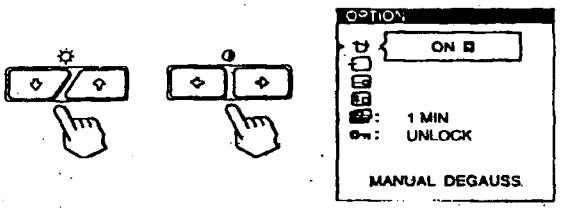
The OPTION OSD allows you to manually degauss the screen and adjust settings such as the OSD position and power saving delay time. It also allows you to lock the controls.

Degaussing the screen

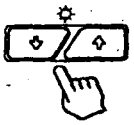
The monitor screen is automatically degaussed (demagnetized) when the power is turned on. You can also manually degauss the monitor.

1 Press the MENU button.
The MENU OSD appears.

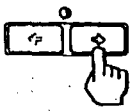
2 Press the ☼↓/↑ and ◑←/→ buttons to select " OPTION," and press the MENU button again.
The OPTION OSD appears.



3 Press the ☼↓/↑ buttons to select " (MANUAL DEGAUSS)."



4 Press the ◑ → button.
The screen is degaussed for about 3 seconds.



If you need to degauss the screen a second time, wait for at least 20 minutes before repeating the steps above.

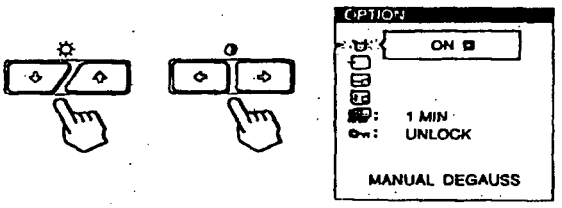
The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

Changing the on-screen display position

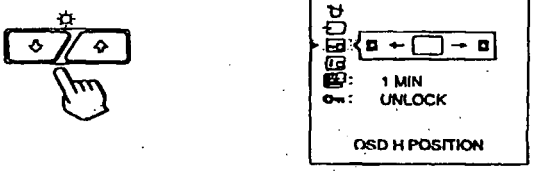
You can change the OSD position (for example, when you want to adjust the picture behind the OSD).

1 Press the MENU button.
The MENU OSD appears.

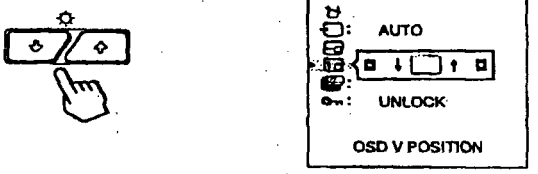
2 Press the ☼↓/↑ and ◑←/→ buttons to select " OPTION," and press the MENU button again.
The OPTION OSD appears.



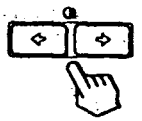
3 Press the ☼↓/↑ buttons to select " (OSD H POSITION)" or " (OSD V POSITION)."
Select " (OSD H POSITION)" to adjust the horizontal position.



Select " (OSD V POSITION)" to adjust the vertical position.



4 Press the ◑←/→ buttons to move the OSD to the desired position.



The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

To reset, press the RESET button while the OSD is on.

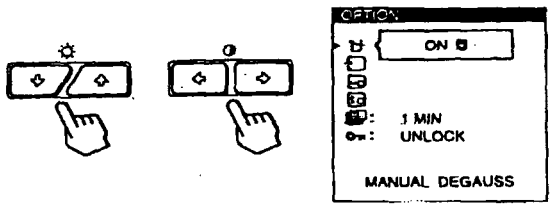
EN

Setting the power saving delay time

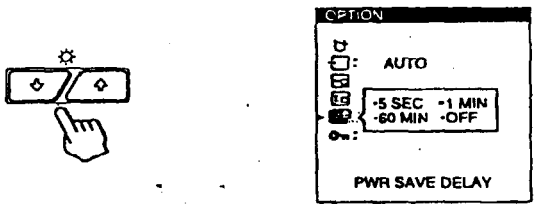
You can set the delay time before the monitor enters the power saving mode. See page 19 for more information on this monitor's power saving capabilities.

1 Press the MENU button.
The MENU OSD appears.

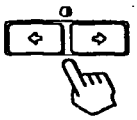
2 Press the ☼↓/↑ and ◑←/→ buttons to select " OPTION," and press the MENU button again.
The OPTION OSD appears.



3 Press the ☼↓/↑ buttons to select " (PWR SAVE DELAY)."



4 Press the ◑←/→ buttons to select the desired time.



When PWR SAVE DELAY is set to "OFF," the monitor does not go into power saving mode.

The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

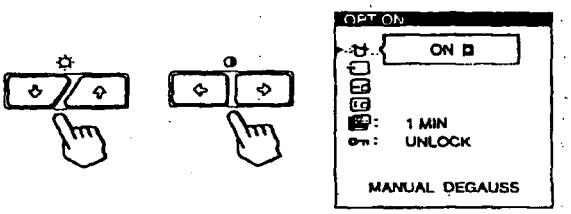
To reset, press the RESET button while the OSD is on.

Locking the controls

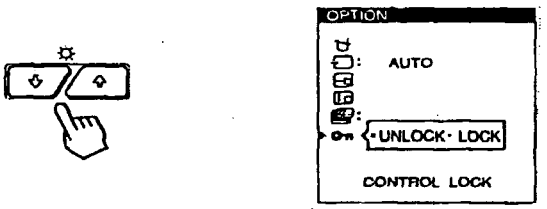
The control lock function disables all of the buttons on the front panel except the ⏻ (power) switch, MENU and INPUT buttons.

1 Press the MENU button.
The MENU OSD appears.

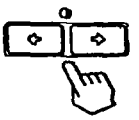
2 Press the ☼↓/↑ and ◑←/→ buttons to select " OPTION," and press the MENU button again.
The OPTION OSD appears.



3 Press the ☼↓/↑ buttons to select " (CONTROL LOCK)."



4 Press the ◑←/→ buttons to select "LOCK."



The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

Once you select "LOCK," you cannot select any items except "EXIT" and " OPTION" in the MENU OSD.
If you press any button other than the ⏻ (power) switch, MENU and INPUT buttons, the mark appears on the screen.

To cancel the control lock

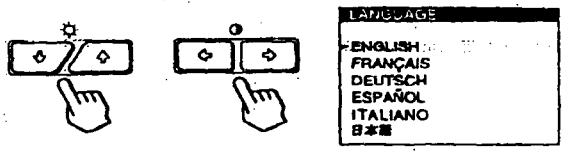
Repeat steps 1 through 3 above and press the ◑←/→ buttons to select "UNLOCK."

Using the LANG (Language) On-screen Display

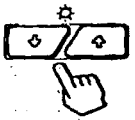
English, French, German, Spanish, Italian and Japanese versions of the OSDs are available.

1 **Press the MENU button.**
The MENU OSD appears.

2 **Press the ☼↓/↑ and ◑←/→ buttons to select "🅰 LANG," and press the MENU button again.**
The LANGUAGE OSD appears.



3 **Press the ☼↓/↑ buttons to select the desired language.**



ENGLISH: English, FRANÇAIS: French, DEUTSCH: German, ESPAÑOL: Spanish, ITALIANO: Italian, or 日本語: Japanese.

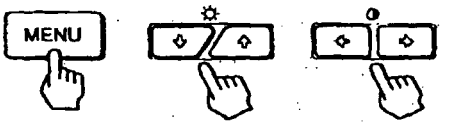
The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

To reset to English, press the RESET button while the OSD is on.

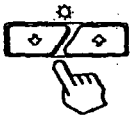
Resetting the Adjustments

Resetting an adjustment item

1 **Press the MENU, ☼↓/↑ and ◑←/→buttons to select the OSD containing the item you want to reset.**



2 **Press the ☼↓/↑ buttons to select the item you want to reset.**



3 **Press the RESET button.**

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Resetting all of the adjustment data for the current input signal

When there is no OSD displayed, press the RESET button.
All of the adjustments data for the current input signal is reset to the factory settings.
Note that adjustment data not affected by changes in input signal (OSD language, OSD position, input signal selection, power saving delay time and the control lock function) is not reset to the factory settings.

Resetting all of the adjustment data for all input signals

Press and hold the RESET button for more than two seconds.
All of the adjustment data, including the brightness and contrast, is reset to the factory settings.

Preset and User Modes

This monitor has factory preset modes for the most popular industry standards for true "plug and play" compatibility.

When a new input signal is entered, the monitor selects the appropriate factory preset mode and momentarily adjusts the phase calibration to provide a high quality picture to the center of the screen. The calibration is stored in memory and is immediately recalled whenever the same input signal is received.

No.	Resolution (dots × lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	640 × 350	31.5 kHz	70 Hz	MCGA
2	640 × 480	31.5 kHz	60 Hz	VGA-G
3	640 × 480	37.5 kHz	75 Hz	EVGA
4	640 × 480	43.3 kHz	85 Hz	VESA
5	720 × 400	31.5 kHz	70 Hz	VGA-Text
6	720 × 400	37.9 kHz	85 Hz	VESA
7	800 × 600	37.9 kHz	60 Hz	SVGA
8	800 × 600	46.9 kHz	75 Hz	ESVGA
9	800 × 600	53.7 kHz	85 Hz	VESA
10	832 × 624	49.7 kHz	75 Hz	Macintosh 16" Color
11	1024 × 768	48.4 kHz	60 Hz	VESA
12	1024 × 768	56.5 kHz	70 Hz	VESA
13	1024 × 768	60.0 kHz	75 Hz	EUVGA
14	1024 × 768	60.2 kHz	75 Hz	Macintosh 19" Color
15	1024 × 768	68.7 kHz	85 Hz	VESA
16	1152 × 864	67.5 kHz	75 Hz	VESA
17	1152 × 870	68.7 kHz	75 Hz	Macintosh 21" Color
18	1280 × 960	60.0 kHz	60 Hz	VESA
19	1280 × 960	85.9 kHz	85 Hz	VESA
20	1280 × 1024	64.0 kHz	60 Hz	VESA
21	1280 × 1024	80.0 kHz	75 Hz	VESA
22	1280 × 1024	91.1 kHz	85 Hz	VESA
23	1600 × 1200	75.0 kHz	60 Hz	VESA
24	1600 × 1200	81.3 kHz	65 Hz	VESA
25	1600 × 1200	87.5 kHz	70 Hz	VESA
26	1600 × 1200	93.8 kHz	75 Hz	VESA
27 *	1600 × 1200	106.3 kHz	85 Hz	VESA

* GDM-500PS only

For input signals that do not match one of the factory preset modes, the digital Multiscan technology of this monitor performs all of the adjustments necessary to ensure that a clear picture appears on the screen for any timing in the monitor's frequency range. However, it may be necessary to fine tune the vertical/horizontal size and centering. Simply press the ASC button or adjust the monitor according to the adjustment instructions. The adjustments are stored automatically as a user mode and recalled whenever the corresponding input signal is received. A total of 15 user adjusted modes can be stored in memory, including those made with the ASC button. If a 16th mode is entered, it will replace the first.

Recommended horizontal and vertical timing conditions

Horizontal sync width duty should be: >4.8% of total horizontal time.
Horizontal blanking width should be: >2.5 µsec.
Vertical blanking width should be: > 450 µsec.

Note for Windows® users

For Windows users, check your video board manual or the utility program which comes with your graphic board and select the highest available refresh rate to maximize monitor performance.

Adjusting the monitor's resolution and color number

If you are using Windows 95, adjust the monitor's resolution and color number according to the steps below. Refer also to the Windows 95 HELP files.
If you are using a Macintosh or compatible computer, Refer to your computer's instruction manual.

1 **Click the Start button and point to Settings. Then double-click the Control Panel.**

2 **Double-click the Display icon.**

3 **Click Settings.**

4 **Click the Color palette. Point to the desired color number and click.**
Point to the Desktop area and drag the slider to the desired resolution.

5 **Click OK.**

Note

Some settings may require that the computer be turned off then back on to take effect. In this case, follow the on-screen instructions.

About the color number

- The Color palette setting and the actual number of colors is as follows:
  High Color (16 bit) → 65,536 colors
  True Color (24 bit) → about 1,677 million colors
- In True color mode (24 bit), speed may be slower.
- The color number may vary according to your computer or video board.

Power Saving Function

This monitor meets the power-saving guidelines set by VESA and Energy Star, as well as the more stringent NUTEK.
If the monitor is connected to a computer or video graphics board that is VESA DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

You can set the delay time before the monitor enters the power saving mode using the OSD. Set the time according to "Setting the power saving delay time" on page 16.

Note

If no video signal is input to the monitor, the "NO INPUT SIGNAL" message (page 20) appears. After the delay time has passed, the power saving function automatically puts the monitor into the active-off mode and the ⏻ indicator lights up orange. Once the horizontal and vertical sync signals are detected, the monitor automatically resumes its normal operation mode.

	Power consumption mode	Screen	Horizontal sync signal	Vertical sync signal	Power consumption	Recovery time	⏻ indicator
1	Normal operation	active	present	present	≤ 160 W (GDM-500PS) ≤ 130 W (GDM-400PS)	—	Green
2	Standby (1st mode)	blank	absent	present	≤ 100 W (GDM-500PS) ≤ 85 W (GDM-400PS)	Approx. 3 sec.	Green and orange alternate
3	Suspend (2nd mode)	blank	present	absent	≤ 15 W	Approx. 3 sec.	Green and orange alternate
4	Active-off (3rd mode)	blank	absent	absent	≤ 5 W	Approx. 10 sec.	Orange
5	Power-off	—	—	—	0 W	—	Off

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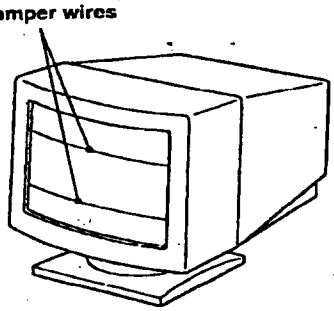
Damper Wires

When viewing a white background, very thin horizontal lines may be visible on the screen as shown below. These lines are the shadows of the damper wires and are characteristic of CRTs that use aperture grilles. The wires are attached to the aperture grille on the inside of the Trinitron tube and prevent the vibration of the aperture grille.

Damper wires



Plug & Play

This monitor complies with the DDC™1, DDC2B, DDC2AB and DDC2B+ Display Data Channel (DDC) standards of VESA.
When a DDC1 host system is connected, the monitor synchronizes with the V. CLK in accordance with the VESA standards and outputs the EDID (Extended Display Identification Data) to the data line.
When a DDC2B, DDC2AB or DDC2B+ host system is connected, the monitor automatically switches to the appropriate standard.

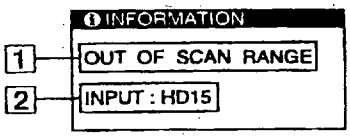
DDC™ is a trademark of the Video Electronics Standard Association.

Note

When using Windows® 95, the DDC standard does not apply to the 5 BNC connectors. If you use the DDC standard, connect the HD15 connector to the computer with the supplied video signal cable.

Warning Messages

If there is something wrong with the input signal, one of the following messages appears.



1 The input signal condition

"OUT OF SCAN RANGE" indicates that the input signal is not supported by the monitor's specifications.

"NO INPUT SIGNAL" indicates that no signal is input, or the input signal from the selected input connector is not received.

2 The selected input connector

Indicates which input connector is receiving the wrong signal. If there is something wrong with the signal from both input connectors, "HD15" and "BNC" are displayed alternately.

To solve these problems, see "Troubleshooting" below.

Troubleshooting

This section may help you isolate the cause of a problem and as a result, eliminate the need to contact technical support.

Symptom	Check these items
No picture	
If the ⏻ indicator is not lit	• Check that the power cord is properly connected. • Check that the ⏻ (power) switch is in the "on" position.
If the "NO INPUT SIGNAL" message appears on the screen, or if the ⏻ indicator is either orange or alternating between green and orange	• The screen is blank when the monitor is in power saving mode. Try pressing any key on the computer keyboard. • Check that your computer power switch is in the "on" position. • Check that the input select setting is correct. • Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets. • Check that the 5 BNCs are connected in the correct order (from left to right: Red–Green–Blue–HD–VD) (page 6). • Ensure that no pins are bent or pushed in the HD15 video input connector. • Check that the video board is completely seated in the proper bus slot.
If the "OUT OF SCAN RANGE" message appears on the screen	• Check that the video frequency range is within that specified for the monitor. Horizontal: 30 – 94 kHz (GDM-400PS), 30 – 107 kHz (GDM-500PS) Vertical: 48 – 160 Hz Refer to your computer's instruction manual to adjust the video frequency range. • If you are using a video signal cable adapter, check that it is correct.
If no message is displayed and the ⏻ indicator is green or flashing orange	• See "Self-diagnosis Function" (page 22).
If using a Macintosh system	• Check that the Macintosh adapter and the video signal cable are properly connected (page 6).
If using Windows® 95	• If you cannot find your model's name (GDM-400PS or GDM-500PS) among the Sony monitors in the Windows 95 monitor selection screen, select the DDC standard monitor or install the Windows 95 Monitor Information Disk (page 7). The DDC standard does not apply to the 5 BNC connectors. If you use the DDC standard, connect the computer to the HD15 connector with the supplied video signal cable.
Picture is scrambled	• Check your graphics board manual for the proper monitor setting. • Check this manual and confirm that the graphics mode and the frequency you are trying to operate at is supported. Even if the frequency is within the proper range, some video boards may have a sync pulse that is too narrow for the monitor to sync correctly.

Symptom	Check these items
Color is not uniform	• Degauss the monitor (page 15). If you place equipment which generates a magnetic field, such as a loudspeaker, near the monitor, or you change the direction of the monitor, color may lose uniformity. The degauss function demagnetizes the metal frame of the CRT to obtain a neutral field for uniform color reproduction. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. • Adjust the landing (pages 13 – 14).
You cannot adjust the monitor with the buttons on the front panel	• If the control lock function is set to on, set it to off using the OPTION OSD (page 16).
White does not look white	• Adjust the color temperature (pages 12 – 13). • Check that the 5 BNCs are connected in the correct order (from left to right: Red–Green–Blue–HD–VD) (page 6).
Screen image is not centered or sized properly	• Press the ASC button (page 7). • Adjust the size or centering (page 10). • Some video modes do not fill the screen to the edges. This problem tends to occur with certain video boards.
Edges of the image are curved	• Adjust the geometry (page 11).
White lines show red or blue shadows at edges	• Adjust the convergence (pages 13 – 14).
Picture is fuzzy	• Adjust the contrast and brightness (page 9). • Degauss the monitor (page 15). If you place equipment which generates a magnetic field, such as a loudspeaker, near the monitor, or you change the direction of the monitor, color may lose uniformity. The degauss function demagnetizes the metal frame of the CRT to obtain a neutral field for uniform color reproduction. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. • If red or blue shadows appear along the edges of images, adjust the convergence (pages 13 – 14). • If the moire is cancelled, the picture may become fuzzy. Decrease the moire cancellation effect (pages 13 – 14).
Picture bounces or has wavy oscillations	• Isolate and eliminate any potential sources of electric or magnetic fields. Common causes for this symptom are electric fans, fluorescent lighting or laser printers. • If you have another monitor close to this monitor, increase the distance between them to reduce the interference. • Try plugging the monitor into a different AC outlet, preferably on a different circuit. • Try the monitor on a different computer in a different room.
Picture is flickering	• Set the refresh rate on the computer to obtain the best possible picture by referring to the computer's manual.
Picture appears to be ghosting	• Eliminate the use of video cable extensions and/or video switch boxes if this symptom occurs. Excessive cable length or a weak connection can produce this symptom.
Wavy or elliptical (moire) pattern is visible	• Cancel the moire (pages 13 – 14). The moire may be modified depending on the connected computer. • Due to the relationship between resolution, monitor dot pitch and the pitch of some image patterns, certain screen backgrounds sometimes show moire. Change your desktop pattern.
Two fine horizontal lines (wires) are visible	• These wires stabilize the vertically striped aperture grille (page 19). This aperture grille allows more light to pass through to the screen giving the Trinitron CRT more color and brightness.
Hum is heard right after the power is turned on	• When the power is turned on, the auto-degauss cycle is activated. While the auto-degauss cycle is activated (3 seconds), a hum may be heard. The same hum is heard when the monitor is manually degaussed. This is not a malfunction.

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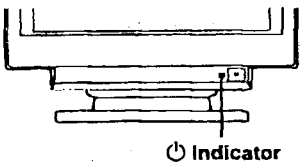
Self-diagnosis Function

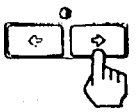
This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer(s), the screen will go blank and the ⏻ indicator will either light up green or flash orange.



If the ⏻ indicator is green

1 Remove any plugs from the video input 1 and 2 connectors, or turn off the connected computer(s).

2 Press and hold the ⏻/→ button for 2 seconds.



If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cables and check the condition of your computer(s).

If the color bars do not appear, there is a potential monitor failure. Inform your authorized Sony dealer of the monitor's condition.

If the ⏻ indicator is flashing orange

Press the ⏻ button to turn the monitor off and on.

If the ⏻ indicator lights up green, the monitor is working properly.

If the ⏻ indicator is still flashing, there is a potential monitor failure. Count the number of seconds between orange flashes of the ⏻ indicator and inform your authorized Sony dealer of the monitor's condition. Be sure to note the model name and serial number of your monitor. Also note the make and model of your computer and video board.

Specifications

GDM-400PS

Picture tube	0.25 – 0.27 mm aperture grille pitch 19 inches measured diagonally 90-degree deflection
Viewable image size	Approx. 365 × 273 mm (w/h) (14 3/8 × 10 3/4 inches) 18.0" viewing image
Resolution	Horizontal: Max. 1600 dots Vertical: Max. 1200 lines
Standard image area	Approx. 330 × 264 mm (w/h) (13 × 10 1/2 inches) or Approx. 352 × 264 mm (w/h) (13 7/8 × 10 1/2 inches)
Deflection frequency	Horizontal: 30 to 94 kHz Vertical: 48 to 160 Hz
AC input voltage/current	100 to 240 V, 50 – 60 Hz, 1.8 – 1.0 A
Power consumption	Max. 130 W
Dimensions	444 × 467 × 453 mm (w/h/d) (17 1/2 × 18 1/2 × 17 7/8 inches)
Mass	Approx. 25 kg (55 lb 2 oz)
Supplied accessories	See page 6

GDM-500PS

Picture tube	0.25 – 0.27 mm aperture grille pitch 21 inches measured diagonally 90-degree deflection
Viewable image size	Approx. 403.8 × 302.2 mm (w/h) (16 × 12 inches) 19.8" viewing image
Resolution	Horizontal: Max. 1600 dots Vertical: Max. 1200 lines
Standard image area	Approx. 388 × 291 mm (w/h) (15 3/8 × 11 1/2 inches) or Approx. 364 × 291 mm (w/h) (14 3/8 × 11 1/2 inches)
Deflection frequency	Horizontal: 30 to 107 kHz Vertical: 48 to 160 Hz
AC input voltage/current	100 to 240 V, 50 – 60 Hz, 2.0 – 1.0 A
Power consumption	Max. 160 W
Dimensions	498 × 505 × 474 mm (w/h/d) (19 5/8 × 20 × 18 3/4 inches)
Mass	Approx. 31 kg (68 lb 5 oz)
Supplied accessories	See page 6

Design and specifications are subject to change without notice.